Task 2

Simple Java application that demonstrates how to:

- Make an **HTTP GET request** to a public REST API (OpenWeatherMap),
- Parse the **JSON response**, and
- Display the **weather data** in a structured format.

Java Program to Consume REST API and Parse JSON

Dependencies: Use the following libraries:

- `java.net.HttpURLConnection` (for HTTP request)
- `org.json` (for JSON parsing – you can download the `.jar` from: https://mvnrepository.com/artifact/org.json/json)

Java Code

```
import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.net.HttpURLConnection;
import java.net.URL;
import org.json.JSONObject;

public class WeatherAPIClient {

    public static void main(String[] args) {
        try {
            // Replace with your OpenWeatherMap API key
            String apiKey = "YOUR_API_KEY";
            String city = "Chennai";
            String urlString =
"https://api.openweathermap.org/data/2.5/weather?q=" + city +
                               "&appid=" + apiKey + "&units=metric";

            // Create URL and connection
            URL url = new URL(urlString);
            HttpURLConnection conn = (HttpURLConnection)
url.openConnection();
```

```
            // Set request method
            conn.setRequestMethod("GET");

            // Read response
            BufferedReader in = new BufferedReader(
                    new InputStreamReader(conn.getInputStream()));
            String inputLine;
            StringBuilder response = new StringBuilder();

            while ((inputLine = in.readLine()) != null) {
                response.append(inputLine);
            }
            in.close();

            // Parse JSON
            JSONObject obj = new JSONObject(response.toString());
            JSONObject main = obj.getJSONObject("main");
            double temperature = main.getDouble("temp");
            int humidity = main.getInt("humidity");
            String weatherDesc =
obj.getJSONArray("weather").getJSONObject(0).getString("description");

            // Display Output
            System.out.println("Weather Report for " + city);
            System.out.println("-----------------------------");
            System.out.println("Temperature: " + temperature + "°C");
            System.out.println("Humidity: " + humidity + "%");
            System.out.println("Description: " + weatherDesc);

        } catch (Exception e) {
            System.out.println("Error: " + e.getMessage());
        }
    }
}
```

Sample Output (Chennai)

```
Weather Report for Chennai
-----------------------------
Temperature: 31.5°C
Humidity: 70%
Description: light rain
```